

From owner-qrp-1@Lehigh.EDU Thu Apr 4 22:06:21 1996
From: QLF%mimi@magic.itg.ti.com
Subject: [6648] (re) Ten-Tec 2-meter kit
Message-ID: <9604041357.AA10593@itg.ti.com>

From: Brad Bradfield QLF

Subj: (re) Ten-Tec 2-meter kit

Someone asked on the list a few days ago about the Ten-Tec two-meter kit. I asked my friend KC5NG for comments on his and he sent me the following:

-***** ORIGINAL MSG RECEIVED ON 04/03/96 AT 16:06 FOLLOWS *****-

Subj: (re) Ten-Tec 2-meter kit

Here are my findings, good and bad, on the Ten-Tec 1220.

PRO:

- Compact size, even by today's standards.
- Easy and fun to assemble.
- No "magic" parts, only a couple simple coils to wind.
- By today's kit-manual standards, the manual is superb. By Heathkit standards, it's fairly good.
- High-quality PC board: double-sided, solder-plated, plated-through holes, silk-screened, lacquer-masked.
- Ten-Tec customer service and support are great! You can actually speak in person by telephone to the very man who designed the rig, and he'll help you identify and troubleshoot problems (but it's not an 800 number).

CON:

- The receiver's performance leaves a lot to be desired. The i-f selectivity is wider than it should be. The front-end offers little resistance to interference from high-powered pagers, commercial signals, and adjacent 2m FM repeaters. If you are listening to a signal, and one comes up 20 KHz away (say another repeater output), they often interfere. Pagers and other commercial services also tend to come in loud and clear at some places in the 2m band.
- Synthesizer noise breaks the squelch on other nearby 2m FM rigs as you tune through the 2m band on the TT-1220.
- No DTMF mic available (not even as an option).
- No scanning capabilities whatsoever.
- No S/Rf metering, even though the RSSI line from the FM detector chip is brought out to a test point and used in aligning the rig (by reading it with a voltmeter).
- Primitive (and power-hungry) LED frequency display and

discrete LED function indicators.

- The VFO does not "roll over" from the top of the band to the bottom (and vice-versa) when you hit the end of the normal tuning range.
- There are some errors in the manual, and some places where things are not crystal clear and might cause the builder to have to backtrack and re-do a few things.
- The manual gives almost no troubleshooting information, especially in the transmitter, and gives no peak-to-peak or RF voltage levels for o'scope troubleshooting.
- The 30 Watt PA is a separate extra-cost option.
- The price... it just ain't that great a deal when you add up the rig, the PA, and the shipping, for a total of \$270, think about the blatant lack of some basic features that even low-cost rigs include (metering, scan, TT mic, etc), consider the "so-so" receiver performance, then compare with any modern or semi-modern 2m FM rig.

MISCELLANEOUS:

- Rumour has it that the VFO non-roll-over thing and scanning could be added in software, but Ten-Tec does not plan to do this any time soon, if at all.
- Rumour has it that Ten-Tec is planning to offer a DTMF mic, but no date (or price) has been set. If and when they do, it'll be an extra-cost option (they've already told me so).

I still haven't gotten my transmitter to work yet...

73,

Dean, KC5NG

-----END INCLUDED MESSAGE-----

Hope this helps.

73's

Brad

From owner-qrp-1@Lehigh.EDU Thu Apr 4 22:06:21 1996
From: "James C. Owen, III" <owen@apollo.eeel.nist.gov>
Subject: [6666] 10meter qrp
Message-ID: <56531.owen@apollo.eeel.nist.gov>

Last week we had a thread going about 10 meter qrp. It seemed that many agreed that a modified CB rig was one way to go. I just received the

latest issue of ALLTRONICS catalog and they have a new 40-channel CB transceiver module with book and schematics. I quote "They have been tested to be fully functional. The microphones are missing. All the controls and channel readout were in the mike." This sounds like it may be the perfect conversion piece. \$10.00.

ALLTRONICS
2300 Zanker Rd
San Jose, CA 95131
408 943 9773
408 943 9776 FAX

Catalog by E-mail info@alltronics.com

From owner-qrp-1@Lehigh.EDU Thu Apr 4 22:06:21 1996
From: facmsa@facilities.buffalo.edu (Adams, Mark S.)
Subject: [6647] 20M Trap Trouble?
Message-ID: <1996Apr04.083700.1483.840@facilities.buffalo.edu>

A fellow QRP'er just put up a two band trap dipole for 20 and 30M using the Rayco 20M traps. The antenna works great on 20M but is very poor on 30M despite its being trimmed for low SWR.

The question is- Are the 20M traps choking off some of the 30M signal? Are these frequencies too close for good operation? We noticed that commercial trapped dipoles do not have 30M in combination with 20M.

I will print and pass along all comments as my friend does not have email access. Thanks.

72 de Mark N2VPK

PS- I will results of my vertical antenna testing soon!

From owner-qrp-1@Lehigh.EDU Thu Apr 4 22:06:21 1996
From: Larry East <LVE1@inel.gov>
Subject: [6661] 40-9er Tip
Message-ID: <2.2.16.19960404181558.21af89d2@134.20.32.17>

I found an easy way to keep the oscillator output from dropping off drastically at the high-end of the tuning range: add a 4-6pF cap from the "bottom" of the xtal directly to ground. In other words, shunt the L/C

series network that is connected from the xtal to ground with a 4-6pF cap (small ceramic type is OK). This keeps the oscillator output from dropping at the low capacitance end of the tuning cap without significantly reducing the tuning range. It does reduce the high-end of the range by 0.2 - 0.3 kHz, but this is less than the reduction that would occur (about 1kHz) if the same size cap is shunted directly across the tuning trimmer (assumed to have the recommend 9-50pF range) -- and it seems to have a greater effect on oscillator output. Its only one more part... :-)

Your results may vary, but 5pF worked for me (3pF did not keep the oscillator output from dropping). If the low-end of your tuning cap is less than 8-10pF, then a larger capacitor may be required.

72, Larry W1HUE/7

From owner-qrp-1@Lehigh.EDU Thu Apr 4 22:06:21 1996
From: clarenco@grenet.fr (Clarencon Didier)
Subject: [6670] 49-er for foreigner
Message-ID: <v01530501ad89e63bb330@[130.190.4.124]>

Hello

French member of G-QRP club, I want to build the famous US 49-er,
and I want to know
- how I can buy this kit
- how can pay a foreigner ? Visa card ??

Thanks

PS: I would like to present this rig on the QRP stand in the next "ISERAMAT 96" 11-12 May, a big french ham radio meeting near Grenoble.

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-----  
+      Didier CLARENCON      +  
+      CRSSA Emile Parde      +  
+      BP 87      38702 La Tronche      +  
+      FRANCE      +  
+      tel : (33) 76 63 69 26      +  
+      fax : (33) 76 63 69 22      +  
+      Email : clarenco@grenet.fr      +  
-----
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:)

From owner-qrp-l@Lehigh.EDU Thu Apr 4 22:06:21 1996
From: Steve Bornstein <saborns@freenet.columbus.oh.us>
Subject: [6643] 49er Success
Message-ID: <Pine.3.07.9604032358.A17727-a100000@acme>

Hello Gang,

Last night I completed another 49er (with sidetone, front panel tuning, and Curtis keyer) housed in a Ten Tec TP-15 case. The case is 1 1/2 x 3 3/4 x 3 and also contains the battery. Made contact with with a station near Dallas, TX and worked another QRP station in New York state.

Incidentally, I used the osc section(5.0pf to 59.2pf Mouser 24TR222) of a poly film rf tuner capacitor for the tuning. I made a shaft out brass tubing I purchased at a local hobby shop.

Wayne has designed a great little rig. I will be taking it to the mountains of North Carolina this weekend when I visit family. will be operating 7038 +/-.

73 Steve K8IDN QRP-L #331

From owner-qrp-l@Lehigh.EDU Thu Apr 4 22:06:21 1996
From: Aa4xx <aa4xx@nando.net>
Subject: [6644] 80 Meter Net
Message-ID: <Pine.SUN.3.91.960403224238.12328B-100000@bessel.nando.net>

Hello Gang,

You are all cordially invited to check into the KnightLite's Net each Sunday night at 10 PM EDT (0200Z) on 3710 KHz. I guess we'll all have to get used to "Daylight Savings Time" beginning Easter Sunday, April 7th. Dave - WA4NID, will be NCS for the April 7th session.

You may check in with any power level from QRO to QRP, and the Net Control station will strive to match the speed at which you check-in, whether it be 2 WPM or 30 WPM.

This past Sunday we had twenty participants in the net, despite the

ever-present QRN. KB4MNG, who was at his work QTH, QNI'ed over the Internet via N4NT0. Clever move, guys! It was also good to hear from some new folks--W8KUX, KE2WB, VE3REP, KS4L, and KB2ELS. We hope you will join us often. The "MightyLite" citations for the March 31st session go to W03B and N3G0 for their 300mW and 500mW Qni's, respectively. Good signals were heard over the entire East Coast, from Ontario to Alabama.

Some other stations attempted to QNI, but didn't make it, primarily due to the S-6/S-7 static levels. We hope you'll give it another try this coming week.

Here's the QNS report for last Sunday's session:

Knightlite's Net, March 31, 1996

KC4URI	Steve	Ashland,	VA	569	5W	
AE4AZ	Ray	Hendersonville,	NC	579	50W	Low Dipole
AE4IC	Bob	Greensboro,	NC	449	5W	
AA6UL	Ralph	Charlottesville,	VA	569	2W	Low Dipole
WJ2V	Preston	Lawrence,	NY	449	5W	
KE2WB	John	Augusta,	GA	589	5W	
W03B	Bob	Pasadena,	MD	449	300mW	
VE3REP	Garry	Ajax,	ONT	349	2W	
VE3VAW	Brien	Toronto,	ONT	559	5W	
N4NT0	Tripp	Tarboro,	NC	579	5W	
W8KUX	Chas	Kensington,	MD	579	4W	Vertical
KF8EE	Ted	Loveland,	OH	569	5W	Century 21
WB0CLD	Bill	St. Charles,	MO	349	5W	
KC4EWT	Dan	Herndon,	VA	579	5W	
KS4L	Randy	Huntsville,	AL	569	5W	Random Loop
KB4MNG	Brian	Williamston,	NC	-	(via Inet/N4NT0)	
KB2ELS	Mark	Milford,	NJ	559	5W	
WA4NID	Dave	Durham,	NC	449	1W	
N3G0	Gary	Raleigh,	NC	349	500mW	
AA4XX	Paul	Raleigh,	NC	(NCS)	5W	Inv Vee up 45'

72 de Paul, AA4XX

From owner-qrp-1@Lehigh.EDU Thu Apr 4 22:06:21 1996
 From: Dale Anderson <dalea@artemis.fc.hp.com>
 Subject: [6662] Antenna Wire Size...?
 Message-ID: <199604041923.AA190635810@artemis.fc.hp.com>

Hi Everyone,

I have a 40m dipole that I built last fall using #22 teflon coated wire. It works GREAT! My only problem is this antenna isn't as clandestine as I need it to be (since the covenants CLEARLY state "NO ANTENNAS"). So, I am considering changing it to #30 stranded copper, teflon coated (for strength). I have nylon pivits at the feedpoint and springs at the ends of the antenna to absorb the shock of the often +80mph gusts we get here on the hill, so I'm sure I can make it survive the wind loading issue.

My question is this, will I have signal loss if using wire so small? I haven't looked at the specs yet to calculate the diff in resistance but I suspect there will be some. At QRP, I know efficiency is paramount, so I am concerned about doing this and ruining my effective QRP potential.

Also, on the occasion where QRO (GASP!) is necessary, am I likely to smoke this stuff? Max pwr would be 120w, so with 50 Ohms at the antenna (not accounting for wire resistance), that comes out to ~1.5 Amps. Can this guage wire handle that if in the open air? I don't have a wire chart in front of me but thought someone on this list would know off the top of his/her head.

If I can change to #30 without problems, I intend to also put up an "inverted-L" for 80m. Otherwise, I'll have to stay with what I have and hope the Association Gestapo doesn't notice it.

Tho' nearly invisible when driving by, one leg of the dipole with the #22 is quite visible from the street if you look directly at it (depending on time of day and color of the sky). The warm spring WX has brought out some nosey "walkers" who seem to pause and point as they stroll by. It may be just a matter of time before I'm served with a summons.

I'm only seeking info on wire efficiency at RF. Please, let's not re-open the "covenants" thread. Any CONSTRUCTIVE info will be appreciated.

Thanks, es 72/73!

-Dale

KB0VCC / QRP-L#91 / CQC#251

From owner-qrp-1@Lehigh.EDU Thu Apr 4 22:06:21 1996
From: "rohre" <rohre@arlut.utexas.edu>
Subject: [6657] Attn.Mike Czuhajewski (sri fr BW)
Message-ID: <n1383505067.75591@msmailgw1.arlut.utexas.edu>

Others may delete now.---

His mail comes back unknown user, sorry for the BW.

Mike,

Please send me a reply with you correct email adr. When I dropped the "bbs" from you other one, it still did not work.

Thanks,

Stuart K5KVH

rohre@arlut.utexas.edu

From owner-qrp-1@Lehigh.EDU Thu Apr 4 22:06:21 1996
From: QRPBOOK@aol.com
Subject: [6678] Electronic Data Book for Homebrewers
Message-ID: <960404225053_185030241@mail06>

I have received a number of requests about the book and if we could take credit cards. I am glad to say we can now take Visa, MasterCard and Discover cards. For those that were asking, please drop me a line and I will e-mail the form to you.

The Electronic Data Book for Homebrewers and QRP Yellow Pages is in the final stages now and will soon be at the printer. It is nearly twice the size we had originally planned (over 180 pages) and it's really looking good. A number of the popular QRP rigs have been run through the lab by Paul Harden, NA5N, and will be featured in the book. These include models from MFJ, Hands, OHR, SWL, WR and others. You'll find more info in the book on these rigs than you will find anywhere else. If you are a homebrewer, electronics hobbyist or technician this book is for you. It is a perfect companion to the ARRL Handbook, too.

We will be introducing the book at the Four Days in May and will have books available at our fleamarket space outside during the Hamvention. We will be in space #3405. Look for the Colorado QRP Club and Data Book signs.

The book will also be available from the G-QRP Club c/o G00KY after Dayton. U.S and Australian dealers and distributors are now being set up.

72/73,

Rich High W0HEP

P.S. Tnx to everyone for your support. It is our desire to make this your book. We encourage your input for the second edition.

From owner-qrp-l@Lehigh.EDU Thu Apr 4 22:06:21 1996
From: cooper@gmpvt.com (Tom Cooper)
Subject: [6667] FS: TI DSP Starter's Kit
Message-ID: <199604042120.QAA21675@web.gmpvt.com>

Hi gang! I bought this from TI, thinking that I would like to learn some DSP, but can see that it is more than I can handle, programming wise. There is a DSP board that connects to your serial port, audio in and audio out and PC software. However, you have to program in assembler, which has always caused me certain pain and anguish. The kits cost \$100 new, which this one may as well be. \$50 plus \$5 S&H.

Thanks.

Tom WA1GUV
cooper@gmpvt.com

From owner-qrp-l@Lehigh.EDU Thu Apr 4 22:06:21 1996
From: vhatley@usa.pipeline.com (Vernon A. Hatley)
Subject: [6660] FT-840 info
Message-ID: <199604041801.SAA06241@pipe12.h1.usa.pipeline.com>

Gang,

A friend of mine has asked me about a FT-840; but I have not experience with one. First thing he wanted to know was how low can you turn the power down without any modifications; namely to the 5 watt range. The other question had to do with QSK; I have the brochure for the FT-840 but it says nothing about QSK. Anyone out there know how good of a CW rig this is? QSK? I will relay on what every advice I get. Thanks

--

KK5RO
Vernon A. Hatley
QRP-L #325

Butternut Vertical
Oak Hills Explorer II

From owner-qrp-1@Lehigh.EDU Thu Apr 4 22:06:21 1996
From: Bob Hirsch <bobh@p3.net>
Subject: [6658] fuel pump noise on Ford Explorers
Message-ID: <1.5.4b12.32.19960404173215.00687a70@p3.net>

Several days ago, there was a post about about possible fuel pump noise on HF in a Ford Explorer. I replied that I had some info on this from working on it with a friend, Don Scippa, KG8KA. Don was more organized than I and he found the info.

Here is the info from Ford:

TSB 95-11-3
Part Number F1pz18b925a
Price of Part \$56.36
Time for repair 1.5hrs
Operation number 951103q

Time and operation number are for a Ford Explorer 1991-95.

Note: For some vehicles with extremely long fuel pump ground wire circuits, it may be necessary to shorten the ground wire to a point closer to the fuel tank.

If the ground is moved, make sure it is secure and protected from corrosion since it is the operating ground for the fuel pump. Check service literature for ground locations. This is for grounds that are more than 3 ft from the tank.

Don and I were mainly interested in Explorers, since we both own one; but according to Hints and Kinks for the Radio Amateur, published by the ARRL, page 3-3, this problem affects a wide range of Ford vehicles, with in tank fuel pumps, and in fact, that article is referring to a Taurus. The article goes on to say that the fix must be handled and installed by a Ford dealer, but doesn't get specific as to why this is the case. It further says that if your dealer has any questions, he should call Ford's RFI section at 313 323 2014 and ask for Mr. Pat Quinn, who is also happens to be a ham, WD8JDZ !

I tried calling him to see if this is still a valid number and it must be, because I got a recording saying he is on vacation.

One other note -- in Dec 95 QST in an article called HF Mobile Installation Tips by John Seybold, KE4PRC, he makes reference to another Ford TSB (technical service bulletin) # 93-15-6, as a fuel pump filter, but says the results got mixed reviews by different hams. This is obviously an older TSB (93) than the one listed above, and I'm not sure if the two are related or in what way, but your dealer would surely have access to both.

Sorry for the delay in getting this out, but it took me a while to remember where I saw the articles.

=====
73 es CUL de KE3OB

Bob Hirsch
bobh@p3.net
qrp-arc1 #8700
qrp-1 #450
ARRL
=====

From owner-qrp-1@Lehigh.EDU Thu Apr 4 22:06:21 1996
From: Allen Jones <ajones@adsnet.com>
Subject: [6669] Gel Cell Battery Packs
Message-ID: <199604042143.PAA25917@adsnet.com>

Hi Gang . . . I received a flyer from Damark and see that they are selling power packs similar to the Innova units popular a couple years ago. No rating is published but it has a 6 & 9V output along with the 12 and a built-in work lamp. It looks like it only has a DC charging cord. It has LED battery status indicators and possibly 2 lighter sockets which would be nice. They are selling them to their frequent buyers club members for \$26.99 plus shipping of \$6.99. Non members pay \$29.99 plus shipping which is still pretty good. I ordered one as I can always use another battery. :-)

Item # is B-5661-472405

Damark's telephone # is 1-800-827-6767

Standard disclaimer applies (I don't work for, own stock in, etc.).

=====
Allen Jones K9DZE ajones@adsnet.com
Michigan City, Indiana EN61nq
ARCI G-QRP NorCal QRP-L #112
=====

From owner-qrp-1@Lehigh.EDU Thu Apr 4 22:06:21 1996

From: PaulKB8N@aol.com
Subject: [6668] Hallicrafters S-38C
Message-ID: <960404162158_369106776@emout10.mail.aol.com>

If, like me, you started QRP operations in the 60s, you may have had a receiver like the S-38C. Before offering this radio to the Boat Anchors crowd, I thought there may be someone putting together a vintage QRP station that might need this. This receiver is in very good shape physically, but needs the bandswitch cleaned and the bandspread dial restrung. If interested, I'll sell at a reasonable price or possibly trade. This has good restoration potential and I'd like to see it used and appreciated. Thanks, Paul, QRP #1069, issued 1963.

From owner-qrp-1@Lehigh.EDU Thu Apr 4 22:06:21 1996
From: stelpony@ix.netcom.com (Steel Pony)
Subject: [6676] I don't care.....!
Message-ID: <199604050129.RAA00561@ix.ix.netcom.com>

Gang:

I don't *care* if you put your 49er in an Altoids Tin.

I don't *care* if you put it in a Sucrets box.

I'm gonna put mine in a larger box so I can have a Real Radio Knob and a Real Radio RF connector. I'm Gonna. I'm Gonna. I'm Gonna.

(Pleeeeee...?)

Spoke with Alan, of the Famous SoCal Gang, about a mod for you folks who insist on the Mint Boxes. Got a handfull of 3.6v @ 60 mAh ni-cad batteries that are used for maintaining the BIOS in computers. They are about .75 x .5 inches. 3 in series would give you 10.8v. The bonus is that all three are smaller then a 9v rectangular and re-chargable. 2 sets and you have a change while the other charges.

Another idea would be to build a charger that plugs into the cigarette lighter.

Inland Empire radio club meets this Sat(6th) at 9am. Nothing unusual about this but this month it's QRP/Homebrew show and tell.

These are the same nice folks who give us the Fontana Swap-meet and will be in the same location(South-side- swapmeet is North)

(Whew...!)

72, John-N5INZ

From owner-qrp-1@Lehigh.EDU Thu Apr 4 22:06:21 1996
From: w3fpr@nando.net (D B Wilhelm)
Subject: [6641] KC1 with HW-8
Message-ID: <9604040406.AA14163@nando.net.nando.net>

I have been "reading the mail" on qrp-1 for some time now, and have enjoyed it. I just finished building a KC1, and installed it into my HW-8. Entire operation has been successful after a bit if cut and try for the VFO connection, and I thought I would share my experience with any of you who are contemplating something similar.

I first followed the instructions provided with the instructions from Wilderness Radio (they state that they have not verified the instructions), and found that the VFO was pulled significantly by the addition of a 10pF capacitor at the drain of the vfo transistor (Q2). Despite much twiddling and tweaking, I could not get the dial readings anywhere close over the full range of the VFO.

Sooo, I looked for a better point to suck off some VFO signal to drive the KC1. I found it at the emitter of Q3 - the emitter follower, but a small capacitor would not couple enough signal to drive the KC1 counter. I ended up with 0.1mf cap driving a 7 inch long piece of RG174, and that did the job.

The audio injection and mute connections I used are basically the same as in the Wilderness Radio instruction sheet. I found the instructions quite adequate except for my problems with VFO pulling.

For those who are interested, let me try to put my process into something like "Heathkit" instructions (but not quite ALL that detail). Part of these instructions imply that the KC-1 is mounted as I did mine, near the center of the rear panel. If you mount it elsewhere, any wire lengths or routing information must be changed to work with your mounting position.

- 1 - Remove wires from the HW-8 circuit board points AA and W (these go to the Key jack.
- 2- Remove R73 (10meg), R74 (10meg), R72 (3.3meg), R75 (47K) and D21.
- 3- Add 2 meg resistor at R73 location.

- 4- Add 1 meg resistor at R75 location.
- 5- Add 100k 1/4 watt resistor at D21 location.
- 6- Add jumper at the R72 location.
- 7- Connect KC-1 Audio to circuit board point AA
(use a twisted pair with ground wire connected at KC-1 AG and the other end connected to the ground lug on the headphone jack)
Note so far, the original sidetone oscillator has been converted into an amplifier and the original sidetone volume control still functions as normal.
- 8- Connect KC-1 keyline to circuit board point W.
- 9- Connect KC-1 Mute to the junction of IC2 pin 8 and C38. (I routed a wire along the back panel and under the headphone jack to get to the foil side of the circuit board for this connection.
- 10- Connect a 7 inch long RG174 coax to KC-1 VFO and VFO gnd points.
- 11- Drill a 1/8 inch dia. hole in the HW8 circuit board through the ground foil near circuit board point G (I made mine midway between point G and C45).
- 12- Cut a small triangular isolated circuit pad in the ground foil near the hole drilled in the above step (A triangle is easy to cut with a knife - make a continuity check to be sure it is isolated from the ground foil).
- 13- Pass the free end of the RG174 coax through the hole and solder the braid to the ground foil, and solder the center conductor to the new triangle pad.
- 14- Place sleeving or small heat shrink over both leads of a 0.1mf capacitor.
Solder one capacitor lead to the emitter of Q3 and the other to the triangle pad created in step 12 above.
- 15- Connect KC-1 dot and dash and handkey inputs to your paddle connector and to the original Key jack. (Make sure you have connected a diode between the dot line and the handkey line - I put mine directly on the back of the KC-1 board between IC pins 9 and 10 - banded end to pin 9).
- 16- Connect "Band-edge determination" as stated in the Wilderness Radio instructions for the HW-8.
- 17- Configure KC-1: Mute 2, sideTone ON, Weight 4, Qsk 1, offsets o1S395 and o3S895.
- 18- Enjoy the fruits of your labor.

Thanks Wayne for a fine accessory to my HW-8.

73/72 Don - W3FPR

W3FPR Don Wilhelm

From owner-qrp-1@Lehigh.EDU Thu Apr 4 22:06:21 1996

From: "W. Daniel, 9V1ZV" <daniel@pandora.lugs.org.sg>
Subject: [6653] Keyer source code bug. Correction.
Message-ID: <3163e705.pandora@pandora.lugs.org.sg>

Hi Gang,

My apologies for posting the source code with one line of buggy code. Actually it was more a typo than anything else but it cause my keyer to behave rather strangely. I now include the correct version. Once again my sincerest apologies. The code below works perfectly (as far as I can tell).

Meanwhile, I have added some capacitors and found that the part that generates the most QRM is in fact the ADC part. However, in my ARK-20 the QRM is negligible so I will probably leave it as it is. Meanwhile, there has been quite a bit of interest shown in the keyer project, and questions have been raised concerning some of the possibilities and potential of the keyer, as well as some design recommendation. I will discuss some of it here.

As a memory keyer

Well, this is a distinct possibility with the main obstacle being the inclusion of some form of non-volatile memory to the circuit. The easiest way to do this, as far as I can tell, is to use one of those 8-pin serial EEPROMs such as those made by MicroChip. This requires only a few lines to interface. The rest of it includes adding a few push buttons to the ports. The coding is a simple exercise in programming and should fit nicely into the rest of the 4k of unused EPROM space. The reason I did not already do this was because my application was primarily as a keyer for the ARK-20 and in that case (literally) there was simply no space for any additional pushbuttons. Besides, I wanted to save the available port pins (a little over 16 unused as yet) for some other purpose. There is nothing to stop anyone else from using these pins for their own purposes however.

As a frequency counter

Another easily implemented feature. The 87C51 has a externally triggerable counter. Someone responded that he had actually implemented just such a frequency counter. This could be something a lot of people might want for their little rigs. The coding for this is probably quite simple in view of the fact that the MCU hardware directly supports such functions.

As a morse code decoder

This can easily be done, with or without the help of an external PLL

such as the NE567. The decoded output could be transmitted using the serial port on the MCU (which will require a MAX232 to convert to regular RS-232 levels if interfaced using normal RS-232 serial ports). Alternatively, you could pick up an LCD display (I got a few at US\$3.00 each) and interface this to the MCU with 7 port pins. These are intelligent displays so nothing more is needed except perhaps a negative voltage source (may not be needed). I have built quite a few morse decoders in my time and found their performance lacking usually and the operation of such devices finicky. As a result I have little faith in automatic morse decoders. What they say about the best decoder being the one between our ears is true. However, the ease of interfacing an LCD to the MCU does raise new possibilities. If I were not so constrained for space, I would have added an LCD to display code speed, frequency, and perhaps some other info.

Using up/down speed control buttons instead of a variable resistor

In fact I have another version of code which controlled the speed of the keyer using two push buttons (or one centred DPST spring loaded toggle switch). The reasons I went with the variable resistor version were:-

1. I did not have space for the pushbutton(s). Actually I do but it was not the right size. The ARK comes with a hole pre-drilled for a variable resistor. I suppose if you really wanted to, you could put in a 2 position toggle switch with a centred normally open contact. This would avoid the need of the ADC.
2. The more pressing reason was that with the pushbutton scheme I had to set the button to my preferred speed upon every power-up since my circuit did not include any non-volatile RAM. However, if we did choose this scheme, the space vacated by the ADC would nicely accept an 8-pin serial EEPROM. This was not available on hand.

Avoiding the need of the 2N2222 driver transistor

It was pointed out that in fact, if I used PORT-0 on the 87C51 to drive the keying circuit directly, I can avoid the need of a driver transistor. This is correct, due to the special fact that PORT-0 is an open collector output without pull-ups. In my case, I needed all the 8-pins of PORT-0 for some other purpose, and so I did not use PORT-0. The additional space used by the 2N2222 did not result in any increased board size.

Using pulse-width measurement to measure resistance instead of ADC

This was a possibility I explored too. The idea is that I could use a port pin to charge up a known capacitance and to discharge it through the variable resistor at another pin. Upon charging up the capacitor, it presents a logic-1 to a third pin, which then starts a timer and the discharge circuit. After a period of time proportional to the resistance value, the charge of the capacitor would have dropped below the logic-1 threshold and the MCU now has a count proportional to the resistance of the variable resistor. This scheme requires only one capacitor and possibly one other resistor for calibration purposes and uses only 3 or 4 port pins. I was not sure of the stability of the measurements yielded using this method because the resolution would be proportional to the conversion time. To achieve good resolution would require substantially longer periods. Furthermore, since the keyer was interrupt driven, it may interfere with the timing of the pulse width, or vice-versa. Nevertheless, this is one possibility worth exploring further and the same technique could come in useful elsewhere.

The spare ADC channel

The ADC0832 used actually has 2-input channels so you could easily use the other channel for your own purposes, such as another variable resistor, etc. without the need of adding any additional hardware.

Conclusion

As you can see, the use of an MCU does greatly increase the number of features that can be included in a project for a relatively small increase in parts count. With the prices of today's MCU's it would be a sin for the QRP community to continue to ignore the hidden potential here. Many newer projects could actually employ serially driven PLL VFO's such as those made by Motorola, easily with an MCU in the rig. LCD displays also add to the professionalism of the final product.

Something that I realized was that there is a lot of flexibility in designing circuits with MCUs. For example, in my prototype board, the ADC was not under the MCU. In my final circuit, I decided to put it under the MCU. Doing this put the interface pins of the ADC directly next to some port pins. So instead of pulling wires from the original pin assignments to the new ADC position, I simply changed the source code to reflect the new pin assignments. The result, 4 wires less under the board. This kind of configurability is very handy when space is a constraint.

The 8051 and its relatives come in a variety of different flavors and sizes. Some come with a built in ADC/DAC, extra counters, higher speeds, more EPROM space, more internal RAM, etc. Some come in 20-pin packages,

making them really small, and most require the least of external support circuitry to make them work. Furthermore, there are other parts such as the PIC 16Cxx parts by MicroChip, or the Basic Stamp by Parallax, all of which represent very easy to use controller parts which could greatly enhanced the features of any small homebrew rig, and possibly reduce the cost. The keyer I built cost about as much as a good Curtiss based keyer, plus I get to make it behave exactly the way I want it to behave and the option of adding other features to it.

The drawback of using microcontrollers in QRP rigs is primarily the lack of programming tools required to work with these parts. One would need to invest in a device programmer (which may vary from part to part) and perhaps a UV eraser, as the very minimum. The software can usually be obtained for free from the net. These would include cross-assemblers, simulators, etc. This problem can partly be circumvented by using parts which can download programs from the PC serial port, and thus not needing any specialized programming equipment. The Parallax BASIC STAMP is one such part. You write your program in BASIC on the PC, compile it and down load it to the very tiny part. THE BSC-1 and 2 are so small you'd have to see it to believe it. They support serial port functions, accept BASIC programs, and has plenty of pins, and the BSC-1 comes in an SIP form so the foot print is exceptionally small. It is a little costly however.

A second problem involved with using microcontroller parts is the generation of RFI. Since there is almost always an oscillator involved, and the digital lines are mostly carrying square waves, you can and should expect lots of harmonics to be generated. This can usually be dealt with by careful PCB layout and screening, proper decoupling and careful part selection. One can also select a crystal frequency that does not interfere with the rig in question. Remember, most of the modern commercial rigs contain MCUs anyway, and they seem to have worked around this problem by and large.

Finally, remember that the most valuable asset of any homebrewer is his (or her) creativity. MCUs gave me a chance to be more creative, it could do the same for you.

73 de 9V1ZV Daniel

(correct source code follows)

\$MOD51

```
defcnt equ 1600
definv equ 65535-defcnt+1
dchi equ definv/256
dclo equ definv-dchi*256
WPMAX equ 7
```

```

WPMLIM equ 63
addr equ 3 ; start-bit, ch0 single ended

keyport equ P2
keyer bit keyport.7
stcon bit keyport.6
pdotk bit keyport.5
pdshk bit keyport.4

kst data 20h
kdotk bit kst.5
kdshk bit kst.4

adcclk bit keyport.3
adcdo bit keyport.2
adcdi bit keyport.1
adccs bit keyport.0

keymask equ 0FEh
ksdelay equ 50
inispd equ (WPMAX+WPMLIM)/2
stk_ptr equ 5Fh
divsr equ 256/(WPMLIM-WPMAX)

keyspd data 0Fh
noditt data 10h
ditt data 11h
kdot data 12h
kdash data 13h
lastat data 14h
curstat data 15h
result data 16h

myflags data 21h
keytyp bit myflags.0

org 0000h
ljmp Start

org 0003h
reti

org 000Bh
clr TR0 ; stop Timer 0
ljmp Timer_Int ; service interrupt

org 0013h
reti

```

```

        org      001Bh
        reti

        org      0023h
        reti

Start:   org      100h

        mov      ie,#0           ; turn off all interrupts
        mov      sp,#stk_ptr     ; initialize stack

        mov      a,#07Fh        ; initialize all ports, except keyer
        mov      keyport,a
        clr      keyer

        clr      a               ; initialize keyer variables
        mov      kdot,a
        mov      kdash,a
        mov      noditt,a
        mov      ditt,a
        mov      myflags,a
        mov      lastat,a
        mov      a,#inispd
        mov      keyspd,a

        mov      TMOD,#01h       ; Timer 0 as 16-bit timer
        clr      TR0             ; stop Timer 0
        mov      TL0,#dclo       ; pre-load 16-bit count
        mov      TH0,#dchi
        setb     ET0             ; enable Timer 0 interrupt
        setb     TR0             ; restart Timer 0
        setb     EA              ; start all interrupts
        acall    Ckstat

spdl1:   clr      adcc1k
        clr      adccs           ; chip-select, start conversion
        mov      a,#addr
        mov      b,#3            ; number of bits for address
loop1:   mov      b,b-1           ; send MUX address
        rrc      a
        jc      one
zero:    clr      adcdi
        sjmp     cont
one:     setb     adcdi

```

```

cont:
    acall    Pulse           ; read out data (1-3)
    djnz     b,loop1
;
    acall    Pulse           ; sync clock pulse (4)
    mov      b,#8
loop2:
    acall    Pulse           ; clock in ADC data
    clr      c
    jnb      adcd0,carry     ; read in ADC data bit
    setb     c
carry:
    mov      a,result
    rlc      a               ; shift in MSB first
    mov      result,a
    djnz     b,loop2
    setb     adccs           ; de-select ADC, EOC

    mov      a,result        ; scale and convert data
    mov      b,#divsr
    div      ab
    add      a,#WPMAX
    mov      keyspd,a        ; update key speed

    acall    Ckstat
    sjmp     spd11

Pulse:
    setb     adcc1k
    nop
    nop
    clr      adcc1k
    ret

Ckstat:
    setb     stcon
    jnb      pdshk,tstk0     ; if either paddle grounded
    jnb      pdotk,tstk0
    clr      ET0
    clr      TR0
    clr      stcon           ; setup for test
    jb       pdotk,tstk0
    setb     stcon
    setb     ET0
    setb     TR0
    mov      curstat,#0      ; nothing in socket
    sjmp     tstkl

tstk0:
    setb     stcon

```

```

        setb    ET0
        setb    TR0
        mov     curstat,#1      ; something plugged in
tstk1:
        mov     a,curstat
        cjne    a,laststat,chgtp1
        sjmp     chgtp2
chgtp1:
        mov     laststat,a      ; update last plug state
        jz      chgtp2
        clr     keytyp          ; assume paddle
        jb      pdshk,chgtp2    ; check if it is straight key
        setb    keytyp
chgtp2:
        ret

Timer_Int:                                ; Timer 0 ISR
        push    psw
        push    acc              ; save accumulator
        mov     TL0,#dclo       ; reload 16-bit count
        mov     TH0,#dchi
        setb    TR0             ; restart Timer 0 immediately
        mov     kst,keyport
;        mov     a,keyport
;        mov     kst,a
        jb      keytyp,strt1     ; if straight key
        jb      kdotk,t11       ; if (!kdotk
        mov     a,kdot          ; && !kdot)
        jnz     t11
        mov     kdot,#2         ; kdot = 2
t11:
        jb      kdshk,t12       ; if (!kdshk
        mov     a,kdash         ; && !kdash)
        jnz     t12
        mov     kdash,#2        ; kdash = 2
t12:
        mov     a,noditt
        jz      t13             ; if (noditt)
        mov     a,ditt
        jz      t14             ; if (ditt)
        dec     a               ; ditt--
        mov     ditt,a
        jnz     t14             ; if (!ditt)
        clr     keyer           ; outport(keyport,keyoff)
t14:
        mov     a,ditt
        jnz     t15             ; if (!ditt)
        dec     noditt          ; noditt--

```

```

til5:      sjmp        tilend
strtk1:    ; straight keying
           jb         kdotk,strtk2
           setb       keyer
           sjmp       tilend
strtk2:    clr        keyer
           sjmp       tilend
til3:      mov        a,kdot
           orl        a,kdash
           jz         tilend          ; if (kdot || kdash)
           mov        a,kdot
           cjne       a,#1,til7       ; if (kdot == 1)
           clr        a
           mov        kdot,a          ; kdot = 0
           mov        a,kdash
           cjne       a,#2,tilend     ; if (kdash == 2)
til11:     mov        a,keyspd
           mov        noditt,a        ; noditt = keyspeed
           add        a,keyspd
           add        a,keyspd
           mov        ditt,a          ; ditt = 3 * keyspeed
           mov        kdash,#1        ; kdash = 1
           setb       keyer            ; output(keyport,keyon)
           sjmp       tilend
til7:      mov        a,kdash
           cjne       a,#1,til8       ; if (kdash = 1)
           clr        a
           mov        kdash,a         ; kdash = 0
           mov        a,kdot          ; This line was buggy <<<<<<<<<<<<<<<<<<<
           cjne       a,#2,tilend     ; if (kdot == 2)
til10:     mov        a,keyspd
           mov        ditt,a          ; ditt = keyspeed
           mov        noditt,a        ; noditt = keyspeed
           mov        kdot,#1
           setb       keyer            ; output(keyport,keyon)
           sjmp       tilend
til8:      mov        a,kdot
           cjne       a,#2,til9       ; if ((kdot == 2)
           mov        a,kdash
           cjne       a,#1,til10      ; && (kdash != 1))
til9:

```

```

        mov     a,kdash
        cjne    a,#2,tilend      ; if ((kdash == 2)
        mov     a,kdot
        cjne    a,#1,til11      ; && (kdot != 1)
tilend:
        pop     acc              ; restore accumulator
        pop     psw
        reti                    ; end of Timer_Int ISR

        end

```

--

Daniel Wee | daniel@pandora.lugs.org.sg
 9V1ZV | daniel.wee@f516.n600.z6.fidonet.org

From owner-qrp-1@Lehigh.EDU Thu Apr 4 22:06:21 1996
 From: "Nick Franco" <kf2ph@bnl.gov>
 Subject: [6671] NW8020/40 Finally Started!
 Message-ID: <9604042241.AA27590@bnlux1.bnl.gov.bnl.gov>

Hi Gang,

Well I waited almost patiently for the kit to arrive. It took about 2 or 3 months. I haven't had the chance to really sit down and get started during the last 2 months that I have it. I decided to begin even if I have only a half hour here and there to work on it.

I started a little gunshy after reading Bob Kellogg's saga day after day (interesting as it was). I did save all the messages for such a time as this - building my own.

OK - so, I wind all four toroids according to spec and begin the VFO section of the kit. Great approach - modular - with separated testing points. After building the VFO, I do the basic test. 12 v and no smoke (good start). I don't have a scope or frequency counter so I turn on the IC-728 and set the VFO for 7.000. I hook up a test lead to TP1 as an antenna, I guess, and listen to nothing but the hiss on my receiver. I spin the VFO up and down and never heard anything. The destructions say to test the voltages in and out of the regulator and at the Drain of the FET. Looks Good! So I pack it all up and bring it to work where there's test equipment.

On the scope the VFO is singing a song at 5 MHz not 7MHz. That's a little far off. I get nervous but start taking turns off of L1. It started with 29 (so much for my factory perfect wrapping job).

Finally, after removing about 9 turns, the bugger is singing at 7.000 MHz. I turn the VFO cap on the kit and notice a band spread from 7.000 to about 7.325 ---- WOW! maybe I should look into working phone, all I need is a SSB add-on kit. Then I remembered Roy's Errata sheet and the heavy duty tuning cap included. I guess I should look into ripping out a plate or two from the main tuning cap and re-winding the L1 inductor. This may bring me back up to 7.000 MHz and have maybe 150 kHz range (that would be more practical).

I'm having fun though. Just thought I'd share my building experiences with the group. Who knows, it may spark someone on to try and build their own kit or something. Heck, if I can get into this electronics model building stuff, anyone can.

Any suggestions would be welcomed. Meanwhile, I'll go onto the next step - The Keying Circuit.

72
Nick

.....
Nicholas J. Franco Brookhaven National Laboratory - RHIC Project
Sr. Systems Specialist Building 1005, UPTON, N.Y. 11973-5000
phone: (516) 344-5467 <http://www.rhichome.bnl.gov/People/franco>
email: nickf@bnl.gov Ham: kf2ph@bnl.gov QRP-L # 13 <><

From owner-qrp-l@Lehigh.EDU Thu Apr 4 22:06:21 1996
From: "Frank G3YCC" <g3ycc@enterprise.net>
Subject: [6663] QRP Web Page
Message-ID: <199604042054.UAA09255@mail.enterprise.net>

Many thanks to those who passed, on their remarks after viewing my web page. It has taken me a while to do it, but hopefully will be interest and some use to fellow QRPers.
Regards for Easter to all!

73
Frank G3YCC G QRP 042

QRP Web Page: <http://homepages.enterprise.net/g3ycc/>

Packet: G3YCC@GB7HUL.#15.GBR.EU

From owner-qrp-l@Lehigh.EDU Thu Apr 4 22:06:21 1996

From: Larry East <LVE1@inel.gov>
Subject: [6659] QRP+ Front End Protection
Message-ID: <2.2.16.19960404175632.21e710ba@134.20.32.17>

I just can't help but comment on this:

>
>A couple of back to back zeners might be cheap insurance for the older design
>'QRP plus' receiver front ends as well, that seem to fail on antenna static
>buildup; although high ohm resistors would likely do as well. A diode after
>all, on a receiver front end is another detector, and that might cause an
>occasional concern. Putting them back to back in series keeps the forward
>junction direction from conducting, unless a REALLY big signal sets up next
>door!
>

First of all, there is already a resistance path from the antenna input to ground in the QRP+: R15 and R16 (about 2.5K total) which make up the divider to the ALC detector. This DOES NOT offer protection to the input mixer from big static discharges (100V across 2.5K is only 40mA after all...). To protect the input mixer, install four diodes right after C49 on the RF board as follows:

```
      C49      |-----|<---|<----|
>---||-----|-----|-----|---Gnd.
              |----->|--->|----|
              |
              |
              |---> to rcv/xmit relay
```

The diodes should be low capacity switching types, such as 1N914/1N4148. Do NOT use Schottky or PIN diodes. The two diodes in series in each leg reduce the chance of creating potential intermod problems on strong signals. I would NOT recommend back-to-back zeniers because of their capacitance (*), although low power (<1W) low voltage types (3-5V) might work OK. The diodes can be mounted on the bottom of the RF board, taking care not to short them to any solder pads.

In the "new improved" QRP+, Index has installed a varistor at this same point to protect the mixer; I don't know the actual type, but I suspect that it must have a breakdown voltage of less than 10V in order to be effective. A properly chosen varistor could probably handle a much larger surge current than the diode scheme shown above and not add a significant amount of capacitance -- does anyone know what type Index uses? (I don't have much success getting such info from Index directly... Bruce is always busy or otherwise unavailable and he or his service tech never return my calls.)

(*) "Why is the capacitance not a problem when a zenier is used to protect a transmitter output transistor?" you might well ask. It is because in the

transmitter application, the zenier is reverse biased thereby reducing its junction capacitance. The zero-bias junction capacitance of a 1W zenier is 50+ pF and drops to 10-15 pF when a reverse bias of 10-12V is applied. The zero bias junction capacitance of a 1N4148 (or similar) switching diode, on the other hand, is only 1-2pF.

72, Larry W1HUE/7

From owner-qrp-1@Lehigh.EDU Thu Apr 4 22:06:21 1996
From: "Bob White" <Bob_White@CCMAIL.aerosys.loral.com>
Subject: [6651] QRP+ Upgrade to "New Improved QRP+"
Message-ID: <9603048286.AA828643394@CCMAIL.AEROSYS.LORAL.COM>

I have had my "New Improved QRP+" back for over a week now and would like to exchange thoughts with others who have gone the same route. I am experiencing some problems with my upgraded Plus, and know of at least one other upgrade which is not "up to snuff".

My radio is displaying incorrect freq. information. The radio display is approx. 350 hz off of actual.

I am also concerned about the AGC. I still am experiencing loss of information in CW with strong signals, but with the increased gain of the receiver it appears to happen much more frequently. The other owner is experiencing the same problem and feels that the gain of his unit is too high. He expressed that he needed to keep the 20db pad inline constantly.

Twice while operating in the SSB mode I heard what appeared to be a sidetone when keying the mike. On each occasion the problem went away when I unkeyed and rekeyed the mike.

My last concern is the ALC circuit. Now that CW mode is also under ALC it is not possible for me to operate below about 300mw in the CW mode. While tuning the transmitter I can adjust the output down to about 70mw, but when I try to rekey the transmitter after the adjustment it will not key. I find this situation to be the case until I get the output power up to about 300mw. I sure enjoyed the low power adjustment of the old plus.

73,
Bob White W03B

From owner-qrp-1@Lehigh.EDU Thu Apr 4 22:06:21 1996
From: JessQRP@aol.com
Subject: [6654] Rocky Mountain Low
Message-ID: <960404111855_184605814@emout08.mail.aol.com>

Hi All,

As you may know last weekend, I was in a cabin near Rocky Mountain National Park. I decided to go low tech the whole way and at the last minute mad an antenna take along. I took a 50 foot roll of speaker wire and stripped it in half, making to lenghts of 18 ga. wire 50 geet long. I then attatched 50 feet of 300 ohm TV twin lead to the flat top, making a 100 foot zepp. When we arrived at the cabin, there were no trees close to the cabin to hang the antenna from (DRAT!). The cabins that we rent are at the YMCA camp near Estes Park and you never know what you are going to get. I did have a real good sloping away shot to the east and only about 600 feet down from the Continental Divide, so I figured that the height was not that critical. I hung the antenna from the eve of the porch and ran the 300 ohm twin lead through the window. The apex of the antenna was only about 15 feet off of the ground, but it was the best I could do. It was later in the afternoon on Friday when I was able to get on the air.

I tried 20 meters and did not hear a whole lot, so I moved to 30 meters and started to tune around. I netted a couple of quick Q's on 30 with AE6N in Lake Havasu was the first. He was excited about the contact as he was using a MFJ Loop on the ground at 5 watts and his signal was pretty good. We exchanged 559's and a few pleasantrys and I moved on. The next Q was with N4FG In Annapolis VA with 559's. I was feeeling pretty good about the antenna's performance on 30 so far. Next contact was with W7VMF in Redmond WA. That was about it for 30 meters and the early evening. I called CQ until I was blue in the face on 40 meters and 80 meters for the rest of the evening and could not steal a contact! I was beginning to wonder if the antenna was going to work on 40 and 80. I called it a night and went to bed.

The next morning I got on 20 meters and made a couple of quick contacts with fair to poor sig reports, listened to 30 for a bit and could not hear anything, listened to 40 and 80 and did not hear anything loud, so it was off with the kids for the day.

I got back on 30 meters around 0100 Zulu and mad a couple of more contacts in Pittsburgh and VA. Around 0154 I worked AL7IK, pretty nice!

I only made one 40 meter contact! N4IY Terry in IN and we had worked before. 80 meters was a total loss excpet for working Jane AA0ZR who was in the mountains about 25 miles away and Steve, N0BF in Loveland on ground wave. >From the 599's that I got on ground wave, I should have been able to be heard, but to no avail.

All the way home on Sunday, I could not figure out why I was not able to make more contacts and why the bands had been so quiet. I was talking with one of my local buddies on 2 meters on the way home and he asked if I had made any SSB contacts during the CQ WPX contest. DUH! I then realized why the bands had been so quiet. If I had been thinking, I could have taken my Kenwood TS140, cranked the power down and had a ball, oh well! I will check the calender next time, as the rigs that I had along were CW only. Maybe I should have borrowed a QRP +;-)

So the story goes...Thanks for all that listened. I even hung a 40 meter dipole on Saturday night and found that the Zepp was louder on receive than the 40 meter dipole, so that didn't help.....

Best
Jess N0TFI

From owner-qrp-1@Lehigh.EDU Thu Apr 4 22:06:21 1996
From: Jeff Gold <JMG@tntech.edu>
Subject: [6665] Ten Tec Kit
Message-ID: <01I35AB2DYJ695RIR0@tntech.edu>

I have a different perspective on the Ten Tec 2 meter kit. First the comment about cost. I remember growing up and fantasizing about building something from Heathkit. Everytime when I went to the store, and even later, when I was older, thiking how expensive their kits were.

Years later when I got my HW9 kit, I thought what a bargain it really was.. 8 bands a meter, a really nice case, works great, great instructions.. a blast to build (therapeutic value alone justified the kit cost). Brings up the question.. why bother building (and this is MFJ's philosophy for not kitting their small transceivers) if you can get a commercial version built for the same, less or just slightly higher.

I build because it is one of my most favorite activities.. I LOVE IT!!!! I love the time I spend doing it (if the kit is good), I love operating a rig I built way more than a commercial rig. It took me years of extra jobs to end up with an Omni VI. When I had to sell it, thought I would be real sad.. well, I finally realized I hardly ever operated it.. too busy with rigs like my Norcal and my OHR 4 bander and such.

The development of a reproducible project with good quality directions, isn't cheap. There are some kits out there that some people can build and get working and they work ok. The really good

kits like the OHR and the Wilderness, anyone who is careful can build and it will work fine if built as specified.

I think the quality of the Ten Tec kit is GREAT!!! I love the build by section and test, and in the back they do give you the important voltages for testing. I have the computer section, the receiver and the transmitter section all working with no problems or surprises, other than ones I did myself by being careless. I found the directions to be top notch.. yes in the first off the line version there was a SMALL number of corrections.. TT faxed me the corrections a couple of days ago. .most were covered by an addendum that came with the kit.. there was one kinda biggy.. they tell you to solder the external speaker jack on the bottom side of the board (since there are a couple of things that are done this way.. i listened) BOY that was a pain to extract last night. I did find out that although the board is plated thru... using solder wick, you can indeed unsolder parts without ruining the board.

The kit is small and has memories.. and yes there are working on a DTMF mike to go with it.. my only real complaint... I want to use the rig mobile and need the mike for autopatch.

The amp kit is extra.. but with a decent antenna..you shouldn't really need more than 5 watts that comes with the kit.. the amp is only another \$64, and can be added later..

I am really enjoying this kit.. more than a lot of others.. I find the directions are not ambiguous, so that takes a lot off. and you don't need to wind coils.. parts are very clearly identified and there are smaller diagrams that only show the section you are working on, so if you build according to their instructions, it shouldn't be all that hard to find the problem

I think the kit is VERY worth the cost. My friend's wife called me yesterday. She wanted to get him a present that he would like (Rather than clothes or kitchen ware :-)) I about went crazy thinking of something.. I finally suggested the TT 2 meter kit with the extra amp.. he needs a mobile rig.. and use to really like building, and need some off work fun activity. It worked out ok, found out this am.. after she has already ordered it, that he is thinking about buying one for himself

73,72

Jeff, AC4HF

From owner-qrp-1@Lehigh.EDU Thu Apr 4 22:06:21 1996

From: Russ1031@aol.com
Subject: [6677] The Other Side of Christmas Island
Message-ID: <960404215255_462729726@emout06.mail.aol.com>

Yesterday my wife and I got home from an adventure in Christmas Island. We uncovered facets of the place that aren't generally included in the DX writeups in ham magazines. You will find them intriguing.

First, I'll confess that I didn't take a radio--our mission was saltwater flyfishing and scuba diving. I was at all times, however, thinking about how I might sneak in a QRP operation should we be lucky enough to return.

Christmas Island is the largest coral atoll in the world. It encloses a gargantuan lagoon that is perfect habitat for bonefish and travally. Consequently, the place is Mecca for saltwater flyfishermen.

Christmas Island is also a bit eerie. When Captain Cook discovered the island (on Christmas Day), not a soul lived there. Later, a defrocked French priest planted an enormous coconut plantation, but the laborers were all temporary workers who were not allowed to settle. During World War II Christmas Island became a busy staging area for the Allies' South Pacific campaigns, and after the war the place was used for testing nuclear bombs and warheads. (Fortunately, these devices were all detonated high in the atmosphere, so that the island was spared the long-term radioactivity visited on some other Pacific venues.) Some 20 years ago America gave the island to the newly formed government of Kiribati, and for the first time in its modern history, Christmas Island became a home to ordinary citizens.

These days, a plane ostensibly flies from Honolulu to Christmas Island once a week. But the economics of this service are tenuous, and you can't be sure exactly when or how you'll get there. By way of example, the arrangements we made fell apart at the last minute and nine of us ended up crammed in a Learjet hastily chartered by the Kiribati government. The return flight was more comfortable, but the departure time was changed three times.

My wife and I caught our share of bonefish, even though our casting skills were very humble in comparison to the world-class fishermen in our group. Bonefish are remarkable creatures. They aren't very large (two to five pounds), but they tear across the flats like rockets. It takes a pretty big trout to get into the backing in our fly reels, but these bonefish did it every time.

I'd say that scuba diving is where Christmas Island really shines. In a world where most of the big fish have now been blown up or eaten, Christmas Island stands alone. Most of the people who've visited in the past were more concerned about fighting wars or igniting thermonuclear devices than exploiting the marine resources. And the locals have been there such a short

time, in such small numbers, that they haven't had the time or need to wipe out the fishes.

I'll tell you about just one of the dives, which my wife and I now refer to as "Tooth City". This dive required an entry through the surf, and every one of us got knocked down and rolled around a bit until we got past the surf line. It was worth it.

The five of us in the group dropped down to about 70 feet and swam out to a current line, which we calculated would sweep us around an underwater point. Before we got to the point, the flora and fauna would have rated a 10 anywhere else, but in our jaded eyes looked about average for Christmas Island. Then some shapes began to loom in the distance. First one, then two, and then a gaggle of sharks swam up to find out who was messing with their domain. By the time the current got us to the point, 15 sharks were swirling around us, as well as hundreds of barracudas, jacks, snappers and groupers.

So there is a glimpse of Christmas Island's other side. I assume it's a fine place to play with radios, but it would be a crime to go there without playing with the creatures as well.

By the way, if you overcome the transportation hassles, it would otherwise to a piece of cake to do some hamming there. Almost everyone stays in a ramshackle hotel (the Captain Cook) which is perfectly comfortable and has plenty of reliable 110 volt power. The whole place is very laid back, and I can't imagine they would object to an antenna. You can arrange transportation, lodging, fishing and diving through Frontiers, whose phone number is 800 245 1950.

Russ Carpenter, AA7QU, McKenzie River, Oregon

From owner-qrp-1@Lehigh.EDU Thu Apr 4 22:06:21 1996
From: ab4el@nando.net (ab4el)
Subject: [6649] TopBand: K1HTV 160M LP/QRP report (fwd)
Message-ID: <9604041446.AA06522@nando.net.nando.net>

Thought I would pass this one along...and note that he is talking not just CW. de Steve AB4EL @nando.net

Forwarded message:

>From owner-topband@frontier.net Thu Apr 4 02:40:59 1996
>Date: Thu, 4 Apr 1996 01:37:07 -0500
>From: dz@VOA.GOV (Dick Zwirko)
>Message-Id: <199604040637.BAA03874@voa3.VOA.GOV>
>To: topband@animas.frontier.net
>Subject: TopBand: K1HTV 160M LP/QRP report

>Sender: owner-topband@frontier.net
>Precedence: first-class
>Reply-To: dz@VOA.GOV (Dick Zwirko)

K1HTV 160M Low Power/QRP report

Its been an interesting week on the Top Band this week. QRN was bad on April 1 but managed to hear (but not work) 3V8BB on CW & SSB. Heard ZD7VJ about an hour before his sunrise on April 3 but the QRN was pretty bad then too. WA3EUL managed to work ZD7VJ who then went back to 80M CW. Then on April 3 & 4 things picked up a bit and I worked the following stations from my MD QTH with 100 Watts (or QRP 5 Watts):

04/03/96	0229Z	GU/DF1AL/P	CW	
	0403Z	D44BC	SSB	
	0430Z	T99T	CW	
	0446Z	HB9ATA	CW	160M QRP Country #35
04/04/96	0431Z	3V8BB	CW	160M Country #145 with 100W
	0453Z	3V8BB	CW	160M QRP Country #36
	0540Z	G3PQA	CW	QRPP 1 Watt - 12 min past "G" sunrise!

Condx were quite good but I've got to give 3V8BB the 'Big Ears' award for the week. Even heard W3GH crank the power down from his normal KW out to the 5 Watt QRP level to work John, G3PQA. Bob said that was the first time he had done that and seemed surprised that the QRP worked.

I'd encourage those DXers who have already worked the DX that many in a pileup are calling (and probably need for a new one) to crank down the wick and try it with low power or QRP. It may take more skill, better timing, etc. but you'll be amazed at the DX that can be worked.

73 de Rich - K1HTV
dz@VOA.GOV

From owner-qrp-l@Lehigh.EDU Thu Apr 4 22:06:21 1996
From: herr@ridgecrest.ca.us (Michael Herr)
Subject: [6645] W6MMA - where are you?
Message-ID: <v01530501ad89f5f8943e@[199.120.150.96]>

Hi gang,

If I recall right W6MMA checks into this list from time to time. It just dawned on me where I hear that call before. My uncle held it in the '30s. W6MMA, if you want to hear more drop me a line
thanks gang

es 72

Mike WA6ARA

From owner-qrp-1@Lehigh.EDU Thu Apr 4 22:06:21 1996

From: PDouglas12@aol.com

Subject: [6655] Zeners on finals

Message-ID: <960404113630_462268691@mail06>

Guys,

I recall we did this last year too. But I don't recall any authoritative answers. I'm sure this isn't the authoritative answer either, :-).

I am not an engineer (sometimes wish I were), so this is empirical/second hand knowledge. But I am given to believe by my betters in the field that the zener does two things. It clips off the HV peaks when SWR is off AND it adds about 300pf of capacitance too, to calm down the LFreq spurious stuff.

Floyd, NQ7X taught me this wisdom. It works too. A 36v (maybe should have used a 43v come to think of it, but it is behaving fine) zener put my NW 80/20 for 20m right to sleep, after it was giving my reflected SWR meter fits on a known resonant 1:1 antenna. Now it shows SWR is 1:1 as it should, meaning there isn't any non-fundamental crud going out onto the feedline (and coming back). Same with my old RadioKit 30m rig. I put a 43v zener in there and I can finally run it at 5 watts without all the spurious junk (which you can actually hear on the monitor/sidetone of these rigs--sounds fuzzy). I love fast/dirty mods that fix things well. The zener can be tack soldered between the collector and the emitter of the PA transistor itself, if you are careful not to create shorts. Banded end of the zener towards the Collector (band goes AWAY from ground in this application). Of course, there's already a zener built into the Sierra design. Zeners cost about 50 cents at the local parts place. Dumb Radio Shack only carries up to 15v zeners, though, which are too low.

Preston WJ2V

From owner-qrp-1@Lehigh.EDU Thu Apr 4 22:06:21 1996

From: Mike Czuhajewski <wa8mcq@u1.abs.net>

Subject: [6646] Re 1000 MPW

Message-ID: <Pine.BSI.3.91.960404072606.6572B-1000000@u1.abs.net>

Regarding the recent discussion about the 1000 Miles Per Watt award issued by the QRP ARCI--For what it's worth, the award came into being in the late 60's, when the QRP ARCI was still a 100 watt [input] club, not a true QRP club. I don't know the intent of the

Founding Fathers who created it, but I've always considered it more of a fun-type award to encourage QRP operation, not to be taken seriously as a cold, clinical metric. If we want to get into the latter mode, we must then logically include such things as antenna free space gain, height, ground conductivity, feedline loss, path distance, number of hops, frequency, time of day/solar cycle, receiving end antenna + feedline + sensitivity, etc.

There was an article in SPRAT #57, Winter 1988/89, by G3CCB who brought the issue up. He pointed out the obvious problem with the assumption that all 1000 MPWs are created equal, that signal strength falls off as the square of the distance, not linearly--double the distance gives a quarter of the signal strength, not half, triple distance gives a 9th instead of a third, etc--and he proposed a metric called "miles per root watt" which factored this in (using a reference point of 1 watt and 1000 miles). He even included a nomogram for easy calculations. Interestingly, I don't believe the article was even commented on, and nothing was heard again. Not that the basic idea is without merit, of course, just that most QRPers probably do it for the fun of it and not as a cold, clinical measure of performance.

Wes Hayward (W7ZOI) had a column in the QRP Quarterly for about 4 issues, circa 1985, and in one of them he advocated the use of ridiculously low powers at close distances for fun-type experiments when propagation is too poor to work much DX with QRP. (He also proposed the use of a 4 or 5 letter codeword sent several times to verify reception.) The particular column was subtitled "The Final Here is a Pair of Diodes" :-). He and his friend, a little over a mile away, were doing QRP experiments on 20 and ran into trouble with weak DX stations QRMing them, so he built a diode doubler to put them on 10 meters, which was mostly dead at the time.

Myself, I always considered the 1000 MPW as a rite of passage of sorts. Sure I've done things like getting 7 million MPW by working a ham in the same subdivision with nanowatts (in 1991) but I've also made my share of contacts with Eastern Europe with double digit milliwatts on several bands (when sunspots still existed!). If it ever comes to a straw poll, I'd vote for keeping the 1000 MPW award as a light hearted, entertaining pastime rather than a cold, clinical, sterile metric.

73 and Queue Our Pea DE WA8MCQ wa8mcq@abs.net [note new address, in slightly different format--the old wa8mcq@bbs.abs.net will no longer work]

From owner-qrp-1@Lehigh.EDU Thu Apr 4 22:06:21 1996
From: "P.F. Coppin" <coppin@freenet.hamilton.on.ca>
Subject: [6652] Re: 20M Trap Trouble?
Message-ID: <Pine.SOL.3.91.960404101523.6868A-100000@james.freenet.hamilton.on.ca>

On Thu, 4 Apr 1996 facmsa@facilities.buffalo.edu wrote:

>
> A fellow QRP'er just put up a two band trap dipole for 20 and 30M using the
> Rayco 20M traps. The antenna works great on 20M but is very poor on 30M
> despite its being trimmed for low SWR.
>
> The question is- Are the 20M traps choking off some of the 30M signal? Are
> these frequencies too close for good operation? We noticed that commercial
> trapped dipoles do not have 30M in combination with 20M.
>
> I will print and pass along all comments as my friend does not have email
> access. Thanks.
>
> 72 de Mark N2VPK
>
> PS- I will results of my vertical antenna testing soon!
>
>
Hi Mark:

The trap dipole should work, if properly tuned and fed. Define very poor! Don't forget, 30m is a very different band than 20. Much less traffic, which might mean fewer signals for your friends receiver to play with. Also, maximum allowable bandwidth on 30M is 1KHz, not 6 like the rest of HF. I'm not sure that that means anything, except that digital signals incl cw are supposed to be narrow-banded. There is also power limit - no kilowatts here! Might make a difference.

Height is also important - typical bi-lobed pattern will be obtained at 33 feet on 20 (I KNOW -IF, IF, IF!), but you need 46 feet on 10 - if significantly less than that, you have a big ball pattern with high angle signal.

The commercial dipoles don't typically mix WARC and harmonic bands because those dipoles are intended to work harmonically over related bands by making odd 1/2 wavelength combinations.

Trap losses can be significant at qrp. If the trap is designed and built to handle a kilowatt, it might be gobbling up what little rf you have.

Try putting up a simple 30m dipole in the same place and compare performance, or, take the traps out temporarily and compare.
(You did leave enough wire on the ends, right?!)

GL 73s de Paul

-:-:-	PAUL F. COPPIN	coppin@freenet.hamilton.on.ca
-: :-	-:-:- -:-:-	VE3PFT/VA3RSI CFH5391/MM
-:	-: :- -: :- ::	VE3PFT@VE3DTV.#scon.on.ca.na
-:-:-:-:-	-:-:-:- -:-:-:- -:-:-	VE3PFT@VE3PFT-2.#scon.on.ca.na
	-: -:	ve3pft@port.ve3mch.ampr.org
	-: -:	ve3pft@ve3pft.ampr.org

From owner-qrp-1@Lehigh.EDU Thu Apr 4 22:06:21 1996
 From: Bernard Seront <seront@seism1.ess.sunysb.edu>
 Subject: [6672] Re: 49-er for foreigner
 Message-ID: <2.2.32.19960404230650.0074ed28@seism1.ess.sunysb.edu>

Bonjour Didier!

Tu es sans doute le premier Fran=E7ais =E0 t'inscrire sur le la liste QRP= depuis la France!
 Je suis =E0 Stony Brook, Long Island (=E0 l'est de new York City) depuis 1= an et demi, pour faire de la recherche. J'=E9tais =E0 Montpellier avant de venir.

Pour le 40-9 je ne pense pas qu'il y ait de solution simple, NORCAL n'accepte que les ch=E8ques, en US\$ bien sur. Si tu peux faire un ch=E8que= en dollars cela serait le plus simple (officiellement c'est autoris=E9, mais le plus souvent la banque pose des probl=E8mes, je l'ai fait une fois et ils= ont charg=E9 mon correspondant des frais, au lieu de les rajouter =E0 mon d=E9bi= t, ce qui fait que la personne =E0 re=E7u moins d'argent que ce que le ch=E8que= indiquait!).
 Peut =EAtre un revendeur qui est sur la liste et qui est en mesure de= prendre une carte visa pourra faire l'interm=E9diaire.
 Si personne ne te contactes avec une solution simple, et que tu as confiance je peux te proposer de m'envoyer un ch=E8que en FF, pour l'=E9quivalent du= prix du 40-9er plus le port pour la France, et je l'ach=E8te et te le r=E9exp=E9d= ie.

Je n'ais jamais fait de kit de chez Norcal mais depuis que j'en entends parler sur la liste, cela m'a l'air d'=EAtre des kits super. J'ai fait r=E9cemment deux kit de chez OHR, un explorer II 40m et un sprint 30m, ce= sont aussi de super radios. C'est assez incroyable de voir la qualit=E9 des kits

QRP aux US, il y a vraiment un march=E9 pour ca, et les d=E9veloppeurs font= un
tr=E8s bon travail.

A bientôt. Amiti=E9s

Bernard, KB2TGH.

PS: Je viens d'aller faire un tour sur le serveur web de Norcal ils prennent les "Money Order", donc un mandat international doit pouvoir faire. Le kit est =E0 25\$ plus 5\$ frais d'exp=E9dition DX.

<<><><>> Bernard Seront
| e-mail: seront@seism1.ess.sunysb.edu
| (o)(o) http://rock.ess.sunysb.edu:8080/
| _) addr: Department of Earth and Space Sciences
| ,___| State University of New-York at Stony Brook
|___/ STONY BROOK, NY, 11794-2100, USA
/ \ phone: (516)632-8302 fax: (516)632-8240

From owner-qrp-1@Lehigh.EDU Thu Apr 4 22:06:21 1996
From: Bernard Seront <seront@seism1.ess.sunysb.edu>
Subject: [6674] Re: 49-er for foreigner
Message-ID: <2.2.32.19960404233540.00a26378@seism1.ess.sunysb.edu>

At 06:06 PM 4/4/96 -0500, Bernard Seront wrote:

>Bonjour Didier!

>

....

Sure enough, I messed up.

This was intended to be private. Sorry for the bandwidth.

If someone REALLY wants the translation, I may do it, :-)

While we are there: here is the solution for the payment of the 40-9er from France: an international money order in US\$, this is actually the less expensive method to send money from France to another country.

Bernard, KB2TGH.

Bernard Seront, seront@seism1.ess.sunysb.edu
http://rock.ess.sunysb.edu:8080/

From owner-qrp-l@Lehigh.EDU Thu Apr 4 22:06:21 1996
From: Kevin Muenzler <muenzlerk@uthscsa.edu>
Subject: [6664] RE: Antenna Wire Size...?
Message-ID: <01BB222E.9C324200@muenzlerk.uthscsa.edu>

On Thursday, April 04, 1996 6:23 AM, Dale Anderson[SMTP:dalea@artemis.fc.hp.com] wrote:

>
> Hi Everyone,
>
<snip>
> My question is this, will I have signal loss if using wire so
> small? I haven't looked at the specs yet to calculate the diff
<snip>

> Also, on the occasion where QRO (GASP!) is necessary, am I
> likely to smoke this stuff? Max pwr would be 120w, so with
> 50 Ohms at the antenna (not accounting for wire resistance),
> that comes out to ~1.5 Amps. Can this guage wire handle that
> if in the open air? I don't have a wire chart in front of
> me but thought someone on this list would know off the top
> of his/her head.
>
> If I can change to #30 without problems, I intend to also put
> up an "inverted-L" for 80m. Otherwise, I'll have to stay with
> what I have and hope the Association Gestapo doesn't notice it.
<snip>

>
> Thanks, es 72/73!
> -Dale
> KB0VCC / QRP-L#91 / CQC#251
>

You should have no problems with QRP. QRO may give you a problem. It just has to be able to handle the current toward the center of the dipole. Theoretically the thinner the wire the better since most of the current flows along the surface of the wire. A wire that is "all surface" is better.

Kevin, WB5RUE
muenzlerk@uthscsa.edu
wb5rue@amsat.org

From owner-qrp-1@Lehigh.EDU Thu Apr 4 22:06:21 1996
From: PDouglas12@aol.com
Subject: [6673] Re: NW8020/40 Finally Started!
Message-ID: <960404183345_369186652@emout09.mail.aol.com>

Nick,

I sent you a private email about your VF0, but so you don't get a hundred NW builders all emailing you, I am posting this. Your VF0 is SUPPOSED (I know I'm shouting) to be around 5 mHz for a 40m rig. This is a superhet with mixers. Look at your bands table for correct freq. There is no band in the band table that uses a 7mHz VF0!

Anyway, that's what this group is for. To holler at you, so your rig will work!

: -)

72,

Preston WJ2V

From owner-qrp-1@Lehigh.EDU Thu Apr 4 22:06:21 1996
From: KR4GL@aol.com
Subject: [6642] Re: paddle question
Message-ID: <960403230950_461964427@emout09.mail.aol.com>

I appreciated the comments on keys and adjusting them.

I have a Vibraplex iambic paddle(s) and have never been able to adjust it so that I like it.

Probably has something to do with the fact that I don't know how to use an iambic. I just hit it with fore finger to make several dahs and my thumb for several dits.

Anyway, too much travel and I make mistakes. Too little travel and I make other kinds of mistakes.

Anytime you can share insights don't hesitate.

de KR4GL
John Foote

From owner-qrp-1@Lehigh.EDU Thu Apr 4 22:06:21 1996
From: dgf@netcom.com (David Feldman)

Subject: [6656] Re: QRP+ Upgrade to "New Improved QRP+"
Message-ID: <199604041709.JAA21170@netcom20.netcom.com>

Bob White <Bob_White@CCMAIL.aerosys.loral.com> writes,

>

> I have had my "New Improved QRP+" back for over a week now and would

Mine is still pending, but supposedly was shipped 4/2.

> Twice while operating in the SSB mode I heard what appeared to be a
> sidetone when keying the mike. On each occasion the problem went away
> when I unkeyed and rekeyed the mike.

My unit (before upgrade) had this problem quite severely - in fact if I
keyed the mic frequently in a short period of time I could actually crash
the microprocessor. I suspect a firmware bug. Anyway, I found that "dirty"
mic PTT switch contacts contributed to the problem. I've heard that a
0.01 uF bypass cap on the PTT input at the radio may reduce the problem.
I'm disappointed that you've experienced this with your upgraded unit; I'll
check closely my unit for the same symptom.

73 Dave WB0GAZ dgf@netcom.com

From owner-qrp-1@Lehigh.EDU Thu Apr 4 22:06:21 1996
From: GREGOIRE@endor.com (ERNEST GREGOIRE)
Subject: [6675] Re: QRP+ Upgrade to "New Improved QRP+"
Message-ID: <199604042336.SAA130138@nss2.CC.Lehigh.EDU>

>

> I have had my "New Improved QRP+" back for over a week now and would
> like to exchange thoughts with others who have gone the same route.

>

> I am also concerned about the AGC. I still am experiencing loss of
> information in CW with strong signals, but with the increased gain of
> the receiver it appears to happen much more frequently.

> 73,

> Bob White W03B

>

Hello Bob and Gang,

My QRP++ has the same AGC trouble as yours, Bob. I listened to W1AW
on 80 meters and the signal is stronger than 60 over 9 here. I can get it
on a dummy load and 5 feet of coax. I solved the AGC cut off by detuning
the tuner to a 10 meter setting. This provides easy listening and is no

bother while just receiving code. Even in a contest, few stations had the signal strength of W1AW, so it shouldn't be a real bother. I have not tried it in a contest yet, so the jury is still out on this one. I have not tried SSB yet either, maybe this Saturday. This will be the only day this week end to QRP, and having EAST meets WEST family gathering at the ole QTH on Sunday.

de AA1IK N.E.-QRP-C. # 202 (Lead by example, It is better to)
 QRP-L member #95. (pull a string than it is to push it.)

Ernie Gregoire
RR 1 Box 221
Canaan, NH. 03741

New England QRP Club, information
available on request by sending me a
S.A.S.E. or via E-mail.

e-mail : GREGOIRE@ENDOR.COM
packet : AA1IK@WA1WOK.FN43FE.NH.USA

From owner-qrp-1@Lehigh.EDU Thu Apr 4 22:06:21 1996
From: "N100Q Tom R. @ MR01 04-Apr-1996 1013" <randolph@est.ENET.dec.com>
Subject: [6650] re: Zener diode on final Transistor
Message-ID: <9604041527.AA29318@us4rmc.pko.dec.com>

> A zener diode protects by clipping off voltage peaks which exceed its
> breakdown voltage, which should be less than that of the transistor you wish
> to save. (Naturally).

As long as we're revisiting this issue, I have a thought... (so that's what that burning smell was!)

As I understand it, the maximum voltage the transistor will see, even transmitting into an open circuit, is twice the voltage it puts into the coax. At 5W, this is about 44 volts peak.

My thought is simply, use transistors rated for over 44 volts! I left the Zener off my transmitter, which used a switching transistor, and haven't really had much trouble with popping it, even into an open circuit.

=====
Tom Randolph N100Q NE-QRP 419 QRP-L 87 ARRL randolph@est.enet.dec.com
=====